

CLAIMS

What is claimed is:

1. A method for completing a well, comprising:
lowering a tubular string into said well;
selectively filling said tubular string with fluid as said tubular string is lowered into said well;
selectively circulating fluid out of said tubular string such that said fluid is directed downwardly as said fluid leaves said tubular string; and
selectively pumping cement out of said tubular string such that said cement is directed upwardly as said cement leaves said tubular string.
2. The method of Claim 1, further comprising:
selectively blocking a passageway through a bottom end of said tubular string.
3. The method of Claim 1, further comprising:
selectively blocking down jets in said tubular string.
4. The method of Claim 1, further comprising:
selectively opening up jets in said tubular string.
5. The method of Claim 1, wherein said step of selectively filling further comprises:
selectively permitting fluid flow from said well into said tubular string.
6. ~~Float collar/ shoe equipment for use in lowering a tubular string into a wellbore, said equipment comprising:
an outer tubular member and an inner tubular member moveable between a first position and a second position; and
one or more valves positioned between said outer tubular member and said inner tubular member when said inner tubular member is in said first position.~~

one or more valve seats positioned between said outer tubular member and said inner tubular member.

8. Float collar/ shoe equipment of Claim 6, wherein said inner tubular member is moveable with respect to said outer tubular member from said first position to a second position for uncovering said valves and said valve seats.
9. Float collar/ shoe equipment of Claim 6, wherein said outer tubular member defines one or more passageways therethrough which are blocked by said inner tubular member in said first position, said one or more passageways being opened to permit fluid flow from within said tubular string to outside of said tubular string when said inner tubular member is moved from said first position to a second position.
10. Float collar/ shoe equipment of Claim 6, further comprising a seat secured to said inner tubular member for receiving a drop member.
11. Float collar/ shoe equipment of Claim 6, wherein said one or more valves comprises a plurality of flapper valves.
12. Float collar/ shoe equipment of Claim 6, wherein said one or more valves are held in an open position when said inner tubular member is in said first position.
13. Float collar/ shoe equipment operable for use in lowering a tubular string into a wellbore, said tubular string having an inside and an outside external to said inside, said well equipment comprising:
 - an outer tubular member forming a portion of said tubular string and having at least one up jet therein, each of said at least one up jets providing a passageway between said inside and said outside of said tubular string; and

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a moveable member, said moveable member being mounted to block fluid flow through said at least one up jet in a first position, said moveable member permitting fluid flow through said up jet in a second position.

14. Float collar/ shoe equipment of Claim 13, further comprising:

at least one down jet, wherein said moveable member is mounted to permit fluid flow through said at least one down jet in said first position, said moveable member being mounted to block fluid flow through said at least one down jet in said second position.

15. Float collar/ shoe equipment of Claim 13, further comprising one or more valve seats, said one or more valve seats being insulated from fluid flow in said first position and being selectively engageable with fluid flow in said second position.

16. Float collar/ shoe equipment of Claim 15, further comprising one or more valves for operation with said one or more valve seats.

17. Float collar/ shoe equipment operable for use in lowering a tubular string into a wellbore, said tubular string having an inside and an outside external to said inside, said well equipment comprising:

a moveable member operable for selectively controlling fluid flow through one or more jets, said jets directing fluid from said inside of said tubular string to said outside of said tubular string; and

a drop member mounted adjacent to said moveable member, said drop member being operable in response to fluid pressure for engaging said moveable member.

18. Float collar/ shoe equipment of Claim 17, further comprising one or more valves, said moveable member being operable for activating said one or more valves for controlling fluid flow through said tubular string.

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19. A method for completing a well operable for use in lowering a tubular string into a wellbore, said tubular string having an inside and an outside external to said inside, said method comprising:
insulating one or more valves from fluid flow through said tubular string such that said valves are held in an open position; and
selectively uncovering said valves for controlling fluid flow through said tubular string.
20. The method of Claim 19, wherein said step of selectively uncovering further comprises dropping a member into said tubular string.
21. The method of Claim 19, further comprising:
selectively closing one or more passageways between said inside of said tubular string and said outside of said tubular string.
22. A method for a well for use in installing a tubular string into a wellbore, said tubular string having an inside and an outside external to said inside, said method comprising:
pumping into said tubular string and through one or more down jets while installing said tubular string into said wellbore; and
selectively blocking said one or more down jets.
23. The method of Claim 22, further comprising:
selectively blocking one or more up jets.
24. The method of Claim 22, further comprising:
selectively exposing one or more check valves to fluid pressure.
25. The method of Claim 22, wherein said step of selectively blocking further comprises releasing a drop element to thereby slide a moveable member.
26. A method for making flow equipment, said method comprising:

Author	Year	Country	Sample Size	Study Design	Findings
Wang et al.	2005	China	1,000	Case-control	Increased risk of lung cancer with high alcohol intake.
Li et al.	2006	China	2,000	Cohort	No significant association between alcohol and lung cancer.
Zhang et al.	2007	China	1,500	Case-control	Increased risk of lung cancer with high alcohol intake.
Chen et al.	2008	China	1,200	Cohort	No significant association between alcohol and lung cancer.
Qin et al.	2009	China	1,800	Case-control	Increased risk of lung cancer with high alcohol intake.
Wu et al.	2010	China	1,600	Cohort	No significant association between alcohol and lung cancer.
Yang et al.	2011	China	1,400	Case-control	Increased risk of lung cancer with high alcohol intake.
Xu et al.	2012	China	1,700	Cohort	No significant association between alcohol and lung cancer.
Guo et al.	2013	China	1,900	Case-control	Increased risk of lung cancer with high alcohol intake.
Hou et al.	2014	China	1,300	Cohort	No significant association between alcohol and lung cancer.
Li et al.	2015	China	1,100	Case-control	Increased risk of lung cancer with high alcohol intake.
Wang et al.	2016	China	1,000	Cohort	No significant association between alcohol and lung cancer.
Zhang et al.	2017	China	1,200	Case-control	Increased risk of lung cancer with high alcohol intake.
Chen et al.	2018	China	1,400	Cohort	No significant association between alcohol and lung cancer.
Qin et al.	2019	China	1,600	Case-control	Increased risk of lung cancer with high alcohol intake.
Wu et al.	2020	China	1,800	Cohort	No significant association between alcohol and lung cancer.
Yang et al.	2021	China	2,000	Case-control	Increased risk of lung cancer with high alcohol intake.
Xu et al.	2022	China	2,200	Cohort	No significant association between alcohol and lung cancer.
Guo et al.	2023	China	2,400	Case-control	Increased risk of lung cancer with high alcohol intake.
Hou et al.	2024	China	2,600	Cohort	No significant association between alcohol and lung cancer.
Li et al.	2025	China	2,800	Case-control	Increased risk of lung cancer with high alcohol intake.

27. The method of Claim 26, further comprising forming an annulus between said inner tubular member and said outer tubular member, and mounting said one or more valves in said annulus.
28. The method of Claim 26, further comprising forming at least one up jet in said outer tubular member, and forming at least one down jet in said outer tubular member.
29. A method for completing a well having a tubular string therein, said method comprising: providing a receptacle within said tubular string for receiving a drop member; mounting said receptacle within said tubular string utilizing a breakable member such that said breakable member breaks at a selected first pressure to permit movement of said receptacle; providing pressure responsive equipment in said tubular string at a well depth above said receptacle, said pressure operated equipment being operable at a second pressure, said first pressure being greater than said second pressure; releasing said drop member to seal said receptacle; pumping into said tubular string to produce a second pressure in said tubular string so as to thereby operate said pressure responsive equipment in said tubular string; and subsequent to operating said pressure responsive equipment at said second pressure, then pumping into said tubular string to produce said first pressure for breaking said breakable member.

30. The method of Claim 29, further comprising
utilizing pressure applied to said drop member sealed in said receptacle to uncover one
or more valves for controlling fluid flow through said tubular string.
31. The method of Claim 29, further comprising:
utilizing pressure applied to said drop member to block off fluid flow from one or more
down jets.
32. The method of Claim 29, further comprising:
utilizing pressure applied to said drop member to open one or more up jets to thereby
provide fluid flow through said up jets.
33. The method of Claim 29, further comprising:
utilizing pressure applied to said drop member to open one or more up jets to thereby
provide fluid flow through said up jets.
34. The method of Claim 29, further comprising:
prior to said step of releasing said drop member for sealing said receptacle, pumping fluid
through said receptacle for circulating fluid within said well.
35. The method of Claim 34, further comprising:
pumping fluid through down jets.

- Sub 27 36. Well equipment operable for use in lowering a tubular string into a wellbore, said tubular
string having an inside and an outside external to said inside, said well equipment
comprising:
an outer tubular member forming a portion of said tubular string and having at least one
down jet therein, each of said at least one down jets providing a passageway between said inside
and said outside of said tubular string; and

SB32 a moveable member, said ~~moveable member~~ being moveable from a first position to a second position, said moveable member being mounted to permit fluid flow through said at least one down jet in said first position, said moveable member being mounted to block fluid flow through said at least one down jet in said second position.

37. The well equipment of Claim 36, further comprising:

at least one up jet, said moveable member being mounted to block fluid flow through said at least one up jet in said first position, said moveable member permitting fluid flow through said up jet in said second position.

38. The well equipment of Claim 36, further comprising one or more valve seats, said one or more valve seats being insulated from fluid flow in said first position and being selectively engageable with fluid flow in said second position.

39. The well equipment of Claim 38, further comprising one or more valves for operation with said one or more valve seats.

40. Well equipment operable for use in installing a tubular string into a wellbore, said well equipment comprising:
one or more up jets formed in said tubular string; and
one or more down jets formed in said tubular string.

41. The well equipment of Claim 40, further comprising:

one or more moveable members, said one or more moveable members being operable for selectively controlling fluid flow through at least one of said one or more up jets and said one or more down jets.

SB33 42. The well equipment of Claim 40, further comprising:

one or more float valves to prevent reverse flow through said tubular string.

~~one or more moveable members, said one or more movable members being operable for selectively opening said one or more first jets for fluid flow therethrough and for closing said one or more second jets to prevent fluid flow therethrough.~~

one or more float valves to prevent reverse flow through said tubular string.

46. ~~The well equipment of Claim 43, wherein said one or more second jets are down jets.~~

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